How does Polycentric Engagement Relate to Countries' NDC Ambition and Mitigation Policy Effort?

Codebook

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Variable name	Variable description	Source
country	Country	
cty_code	Country ISO3 code	
initial_ndc_year	Year of country's initial NDC	Meinshausen et al. 2023
updated_ndc_year	Year of country's most recently updated NDC	Meinshausen et al. 2023
latest_ndc_year	Year of country's latest NDC (if updated_ndc_year is NA, then this is initial_ndc_year)	Meinshausen et al. 2023
ambition_excl_uncond_cap_gdr	**NDC ambition (main indicator)**: Per capita GHG emissions allocated to the country in year 2030 according to fair scenario – per capita GHG emissions allocated to the country according to its unconditional NDC target (**excluding LULUCF** emissions). Its value is positive if the NDC target is more ambitious than the country's fair share; negative if the NDC is less ambitious than the fair share. In this version, we use the **Greenhouse Development Rights' approach** to calculate countries' fair share of emissions.	Robiou du Pont et al. 2017 (fair shares of emissions), Meinshausen et al. 2023 (NDC emissions and population in year 2030)
ambition_excl_uncond_cap_cap	**NDC ambition** (alternative indicator): Per capita GHG emissions allocated to the country in year 2030 according to fair scenario – per capita GHG emissions allocated to the country according to its unconditional NDC target (**excluding LULUCF** emissions). Its value is positive if the NDC target is more ambitious than the country's fair share; negative if the NDC is less ambitious than the fair share. In this version, we use the **per capita approach** to calculate countries' fair share of emissions.	Robiou du Pont et al. 2017 (fair shares of emissions), Meinshausen et al. 2023 (NDC emissions and population in year 2030)
ambition_excl_uncond_cap_cumcap	**NDC ambition** (alternative indicator): Per capita GHG emissions allocated to the country in year 2030 according to fair scenario – per capita GHG emissions allocated to the country according to its unconditional NDC target (**excluding LULUCF** emissions). Its value is positive if the NDC target is more ambitious than the country's fair share; negative if the NDC is less ambitious than the fair share. In this version, we use the **cumulative per capita approach** to calculate countries' fair share of emissions.	Robiou du Pont et al. 2017 (fair shares of emissions), Meinshausen et al. 2023 (NDC emissions and population in year 2030)
ambition_excl_uncond_cap_capab	**NDC ambition** (alternative indicator): Per capita GHG emissions allocated to the country in year 2030 according to fair scenario – per capita GHG emissions allocated to the country according to its unconditional NDC target (**excluding LULUCF** emissions). Its value is positive if the NDC target is more ambitious than the country's fair share; negative if the NDC is less ambitious than the fair share. In this version, we use the **capability approach** to calculate countries' fair share of emissions.	Robiou du Pont et al. 2017 (fair shares of emissions), Meinshausen et al. 2023 (NDC emissions and population in year 2030)
ambition_incl_uncond_cap_gdr	**NDC ambition** (alternative indicator): Per capita GHG emissions allocated to the country in year 2030 according to fair scenario – per capita GHG emissions allocated to the country according to its unconditional NDC target (**including LULUCF** emissions). Its value is positive if the NDC target is more ambitious than the country's fair share; negative if the NDC is less ambitious than the fair share. In this version, we use the **Greenhouse Development Rights' approach** to calculate countries' fair share of emissions.	Robiou du Pont et al. 2017 (fair shares of emissions), Meinshausen et al. 2023 (NDC emissions and population in year 2030)
ambition_incl_uncond_cap_cap	**NDC ambition** (alternative indicator): Per capita GHG emissions allocated to the country in year 2030 according to fair scenario – per capita GHG emissions allocated to the country according to its unconditional NDC target (**including LULUCF** emissions). Its value is positive if the NDC target is more ambitious than the country's fair share; negative if the NDC is less ambitious than the fair share. In this version, we use the **per capita approach** to calculate countries' fair share of emissions.	Robiou du Pont et al. 2017 (fair shares of emissions), Meinshausen et al. 2023 (NDC emissions and population in year 2030)
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ambition_incl_uncond_cap_capab	**NDC ambition** (alternative indicator): Per capita GHG emissions allocated to the country in year 2030 according to fair scenario – per capita GHG emissions allocated to the country according to its unconditional NDC target (**including LULUCF** emissions). Its value is positive if the NDC target is more ambitious than the country's fair share; negative if the NDC is less ambitious than the fair share. In this version, we use the **capability approach** to calculate countries' fair share of emissions.	Robiou du Pont et al. 2017 (fair shares of emissions), Meinshausen et al. 2023 (NDC emissions and population in year 2030)
policy_density_2014	**Policy density**: Count of mitigation-related **policy documents** adopted or amended in the country at national level since 2014	Climate Change Laws of the World Dataset 2023
policy_density_strong_2014	**Strong policy density**: Count of mitigation-related **policy documents with higher policy intensity** adopted in the country at national level since 2014. As policies with higher intensity we classify those with an implementation rather than a planning character. This includes laws, decrees, acts, regulations, resolutions, decree-laws, orders, decisions, EU regulations, ordinances, EU directives, royal decrees and similar. Not counted are plans, strategies, policies, programs, action plans, roadmaps and similar.	Climate Change Laws of the World Dataset 2023

Variable name	Variable description	Source
instrument_density_strong_2014	**Strong instrument density**: Count of mitigation-related **policy instruments with higher intensity** adopted in the country at national level since 2014. As instruments with higher intensity, we classify regulatory measures, economic incentives and direct investment instruments, because these have a stronger ability to induce emission reductions in the short- to medium term. Not included are governance and information instruments.	Climate Change Laws of the World Dataset 2023
memberships_state	**State engagement**: Count of Transnational Climate Governance (TCG) Initiatives the country is a member to as of year 2023, excluding those TCG initiatives with the themes "adaptation" or "resilience".	UNEP 2024, UNFCCC 2024
memberships_sub_nonstate	**Nonstate engagement**: Count of memberships to Transnational Climate Governance (TCG) Initiatives by non- and substate actors located in the country, as of year 2023, excluding those TCG initiatives with the themes "adaptation" or "resilience".	UNEP 2024, UNFCCC 2024
memberships_state_2020	**State engagement before December 2020**: Count of Transnational Climate Governance (TCG) Initiatives the country is a member to as of end of November 2020, excluding those TCG initiatives with the themes "adaptation" or "resilience". To find the relevant data, we either used TCG records that had last been updated by UNEP before December 2020, or used the Wayback Machine of the Internet Archive (https://web.archive.org) to find earlier versions of the respective TCG record.	UNEP 2024, Wayback Machine
memberships_sub_nonstate_2020	**Nonstate engagement before December 2020**: Count of memberships to Transnational Climate Governance (TCG) Initiatives by non- and substate actors located in the country, as of end of November 2020, excluding those TCG initiatives with the themes "adaptation" or "resilience". To find the relevant data, we either used TCG records that had last been updated by UNEP before December 2020, or used the Wayback Machine of the Internet Archive (https://web.archive.org) to find earlier versions of the respective TCG record.	UNEP 2024, Wayback Machine
climate_memberships_rowan	**State engagement in 2015**: Count of climate partnerships the country is a member to as of year 2015.	Rowan 2021
tcgs	**Nonstate engagement in 2012**: Count of memberships to TCG Initiatives by non- and substate actors located in the country, as of year 2012.	Andonova et al. 2017
annexi	**Annex I**: The country is a member of Annex I of the UNFCCC (1) or not (0).	UNFCCC n.d.
ldcs	**LDCs**: The country is a member of the group of Least Developed Countries (1) or not (0).	UNCTAD n.d.
annex	**Annex**: The country is member of Annex I or of non-Annex I to the UNFCCC (categorical	UNFCCC n.d.
ldc_cats	**Country category**: The country is a member of Annex I, of LDCs or of the rest of non-Annex I countries (categorical variable).	UNFCCC n.d., UNCTAD n.d.
co2_cap_2014	**CO2 emissions per capita in year 2014**: Measured in metric tons per capita.	World Bank 2023
co2_cap_ndcyear	**CO2 emissions per capita in year of latest NDC**: Measured in metric tons per capita.	World Bank 2023
co2_cap_b4ndcyear	**CO2 emissions per capita in year before latest NDC**: Measured in metric tons per capita.	World Bank 2023
gdp_cap_ppp_2014	**GDP per capita, PPP, in year 2014**: Measured in constant 2017 international dollars.	World Bank 2023
gdp_cap_ppp_ndcyear	**GDP per capita, PPP, in year of latest NDC**: Measured in constant 2017 international dollars.	World Bank 2023
gdp_cap_ppp_b4ndcyear	**GDP per capita, PPP, in year before latest NDC**: Measured in constant 2017 international dollars.	World Bank 2023
fossil_rents_2014	**Fossil fuel rents in year 2014**: Sum of coal, oil and natural gas rents, measured as percentage of GDP.	World Bank 2023
fossil_rents_ndcyear	**Fossil fuel rents in year of latest NDC**: Sum of coal, oil and natural gas rents, measured as percentage of GDP.	World Bank 2023
fossil_rents_b4ndcyear	**Fossil fuel rents in year before latest NDC**: Sum of coal, oil and natural gas rents, measured as percentage of GDP.	World Bank 2023
ndgain_2014	**ND-GAIN index in 2014**: Measures the country's resilience and vulnerability to climate change, with higher values indicating lower vulnerability. As of year 2014.	ND-GAIN 2023
ndgain_ndcyear	**ND-GAIN index in year of latest NDC**: Measures the country's resilience and vulnerability to climate change, with higher values indicating lower vulnerability. As of the year of the respective country's latest NDC.	ND-GAIN 2023
ndgain_b4ndcyear	**ND-GAIN index in year before latest NDC**: Measures the country's resilience and vulnerability to climate change, with higher values indicating lower vulnerability. As of the year prior to the respective country's latest NDC.	ND-GAIN 2023
br_dem_2014	**Democracy in 2014**: The country is a democracy (1) or not (0) as of year 2014. Democracy is measured on the basis of whether there are free and fair elections that are followed by a peaceful turnover of power.	Bjørnskov and Rode 2020
br_dem_ndcyear	**Democracy in year of latest NDC**: The country is a democracy (1) or not (0) as of the year of the country's latest NDC. Democracy is measured on the basis of whether there are free and fair elections that are followed by a peaceful turnover of power.	Bjørnskov and Rode 2020
br_dem_b4ndcyear	**Democracy in year before latest NDC**: The country is a democracy (1) or not (0) as of the year prior to the country's latest NDC. Democracy is measured on the basis of whether there are free and fair elections that are followed by a peaceful turnover of power.	Bjørnskov and Rode 2020

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